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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,028	04/06/2001	Paolo Prandoni		6423

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EXAMINER

LE, VU

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,028

Applicant(s)

PRANDONI ET AL.

Examiner

Vu Le

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "FG1" and "FG2". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 8-20, 22-29, 31, 33-35, 37-38 are rejected under 35 U.S.C. 102(a) or (e) as being anticipated by Tamir et al, US 5,923,365.

Re claim 1, Tamir discloses a computer method for rendering a stroboscopic representation from images in a video sequence (fig. 1, Abstract, col. 6, lines 32-38), comprising the steps of: *(Note: a stroboscopic representation from images in a video sequence is defined in the specification as a rendered motion trace of an object i.e. foreground feature in a video sequence. For the intended purpose of art rejection, it will be interpreted as such)*

(a) separating the images into a background portion and a foreground portion, resulting in a background sequence and a foreground sequence (fig. 5A: 370, col. 12, lines 3+);

(b) selecting from the foreground sequence at least one feature to be included in the stroboscopic sequence, resulting in a foreground selected sequence (fig. 5A: 390, col. 12, lines 56+);

(c) synthesizing the background sequence and the foreground selected sequence, resulting in a synthesized sequence (fig. 5B: 450, col.13, lines 32-63); and

(d) rendering the stroboscopic representation from the synthesized sequence (fig. 5B: 460, col. 13, lines 32-63).

Re claim 2, the method of claim 1, wherein the images are from a fixed field of view (col. 8, lines 11-16, col. 11, lines 38-55).

Re claim 3, the method of claim 1, wherein separating comprises estimating camera motion in making the video sequence (fig. 3B: 206, 210, 220, col. 11, lines 10+).

Re claim 4, the method of claim 1, wherein separating comprises using camera parameters in making the video sequence (col. 12, lines 3-8, 22+).

Re claim 5, the method of claim 4, wherein the camera parameters have been obtained by sensors (camera(s) used in Tamir are i.e. sensors).

Re claims 8-9, Tamir inherently discloses selecting specified foreground event(s) and specified background location(s) as claimed since the invention allows flexibility in selecting different foreground object(s) and/or different background location(s).

Re claim 10, the method of claim 1, wherein selecting comprises accepting input for the feature to be selected (Tamir allows designating criteria for selecting/highlighting foreground objects, col. 7, lines 38+, col. 8, lines 5+, col. 11, lines 10+).

Re claim 11, the method of claim 1, wherein synthesizing comprises choosing a field of view for the stroboscopic representation (col. 11, lines 38+, i.e. a chosen field of view can be the instantaneous location of a ball and active players).

Re claim 12, the method of claim 11, wherein the field of view is the same as original field of view (col. 11, lines 38+, i.e. the instantaneous location or field of view of a ball and active players are originally from the camera(s)).

Re claim 13, the method of claim 11, wherein the field of view is greater than original field of view (col. 12, lines 38+, i.e. a global wide field of view).

Re claim 14, the method of claim 13, wherein the field of view encompasses all of a foreground movement (col. 12, lines 38+).

Re claim 15, the method of claim 11, wherein the field of view is less than original field of view (col. 12, lines 38+, in Tamir, since the field of view can be synthesized, it would have been inherent to synthesize a field of view that is smaller the original field of view).

Re claim 16, the method of claim 1, wherein rendering comprises generating the stroboscopic representation as a still image (see claim 1, step (d) above).

Re claim 17, the method of claim 16, wherein rendering further comprises converting the still image to video (col. 6, lines 47+).

Re claim 18, the method of claim 17, wherein converting comprises scanning (col. 6, lines 47+, frame grabbing by a camera is essentially scanning).

Re claim 19, the method of claim 18, wherein scanning comprises accepting input for at least one scanning parameter (col. 6, lines 47+, frame grabbing from the camera necessitates some form of camera controlling parameter(s), this is inherent).

Re claim 20, the method of claim 19, wherein the scanning parameter is one of scanning direction, scanning speed and focal length (see claim 19, camera scanning direction, speed and focal length are all necessitated and inherent).

Re claim 22, the method of claim 1, wherein rendering comprises generating the stroboscopic representation as a video including multiple representations of at least one foreground feature frozen at triggering instants (fig. 1, col. 6, lines 47-58, col. 8, lines 36+, col. 13, lines 32-63, Tamir enables analysis/editing of object(s) in still frames to generate video clips. Frame grabbing would initiate triggering instants).

Re claim 23, the method of claim 22, wherein rendering further comprises including a trace of the feature between the multiple representations (fig. 3B: 206, 210, col. 11, lines 10+, col. 13, lines 32-63).

Re claim 24, the method of claim 1, wherein rendering comprises placing multiple representations of at least one foreground feature against a background, with the representations being spaced apart according to a function of time (see figs. 2 or 6B, col. 13, lines 32-63, the superimposed trajectories of players have time indication).

Re claim 25, the method of claim 24, wherein the representations are spaced apart on account of their actual spatial travel (see figs. 2 or 6B).

Re claim 26, the method of claim 24, wherein the representations are spaced apart other than on account of their spatial travel, spatially unrolling their action (see figs. 4 or 6A).

Re claim 27, the method of claim 24, wherein the representations are shown over an actual background (see figs. 2, 4, 6A, 6B, the basketball court is an actual background).

Re claim 28, the method of claim 24, wherein the representations are shown over a synthetic background (col. 13, lines 32-63, the global background image is a synthetic background).

Re claim 29, the method of claim 1, wherein rendering comprises controlling foreground feature persistency (col. 13, lines 32-63, in Tamir, the foreground feature would constituted the tracked object of interested. This tracked object of interest can be traced or highlighted, thus feature persistency is maintained).

Re claim 31, the method of claim 1, wherein rendering comprises assigning a distinctive brightness/color to at least one foreground feature (col. 11, lines 18-29, col. 12, lines 3-8).

Re claim 34, the method of claim 1, wherein the video sequence is of a sports event (see fig. 2, Abstract).

Re claim 35, the method of claim 1, further comprising broadcasting the stroboscopic representation (col. 6, lines 9-31, it clear that sport broadcasting is one of the intended applications in Tamir).

Re claims 37 and 38, these claims are apparatus claims corresponding to the method claim 1, thus they have been analyzed and rejected with respect to claim 1. Furthermore, Tamir discloses the same apparatus as claimed (fig. 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-7, 21, 30, 32, 33, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamir et al.

Re claims 6 and 7, Tamir et al does specifically disclosed selecting foreground object(s) to generate a "replay" sequence at a fixed frame interval or at a clocked time intervals as claimed. However, one skilled in the art would have recognized that selecting foreground object(s) for highlighting/tracking to create a replay video sequence in Tamir would have necessitated sampling the foreground object(s) at a designated interval, whether it may be frame interval and/or clock interval.

Nevertheless, Official Notice is taken to note that sampling techniques such as fixed frame interval and/or clock time interval are notoriously well known and used in the art and would have been obvious to incorporate in applications such as taught in Tamir.

Re claim 21, Tamir teaches input devices such as light pen, touch screen or a trackball (col. 7, lines 38+), but fails to mention a joy stick device as claimed. However, Official Notice is taken to note that a joy stick device as an input means is notoriously well known and used in the art and would have been obvious to incorporate in applications such as Tamir as an alternative.

Re claim 30, the method of claim 29, wherein controlling is for older representations of a foreground feature as a function of time to appear increasingly transparent (see figs. 2 and 6B, also col. 11, lines 18-29). In Tamir, various methods

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are discussed for tracking an object in motion, but making older foreground feature as a function in time to appear increasingly transparent i.e. "fading" as claimed in not disclosed. However, Official Notice is taken to note that a "fading" technique used to analyze video object in motion is notoriously well known and used in the art and would have been obvious to incorporate in applications such as Tamir as an alternative.

Re claim 32, the method of claim 31, wherein the brightness/color is selected as a function of time (col. 11, lines 18-29, col. 12, lines 3-8). Tamir teaches using a color to emphasize a tracked object in motion. However, whether it is being selected as a function of time is unclear. In Tamir, the color used to highlight the tracked object in motion is intended to emphasize the temporal displacement of the object over time. Thus, it is reasonable to conclude that using color to highlight temporal displacement of an object does take into account a function of time.

Re claim 33, the method of claim 1, wherein rendering comprises 3-dimensional reconstruction of the stroboscopic representation. Tamir fails to teach 3D rendering. However, Official Notice is taken to note that 3D rendering is notoriously well known and used in the art and would have been obvious to incorporate in applications such as Tamir if 3D viewing is desirable.

Re claim 36, the method of claim 1, further comprising delivering the stroboscopic representation over the internet. Tamir fails to teach delivering video clips over the internet. However, Official Notice is taken to note that video streaming over the internet is notoriously well known and used in the art and would have been obvious to incorporate in applications such as Tamir if video streaming over the internet is a desirable alternative of video distribution.

Contact

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Le whose telephone number is 703-308-6613. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 703-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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